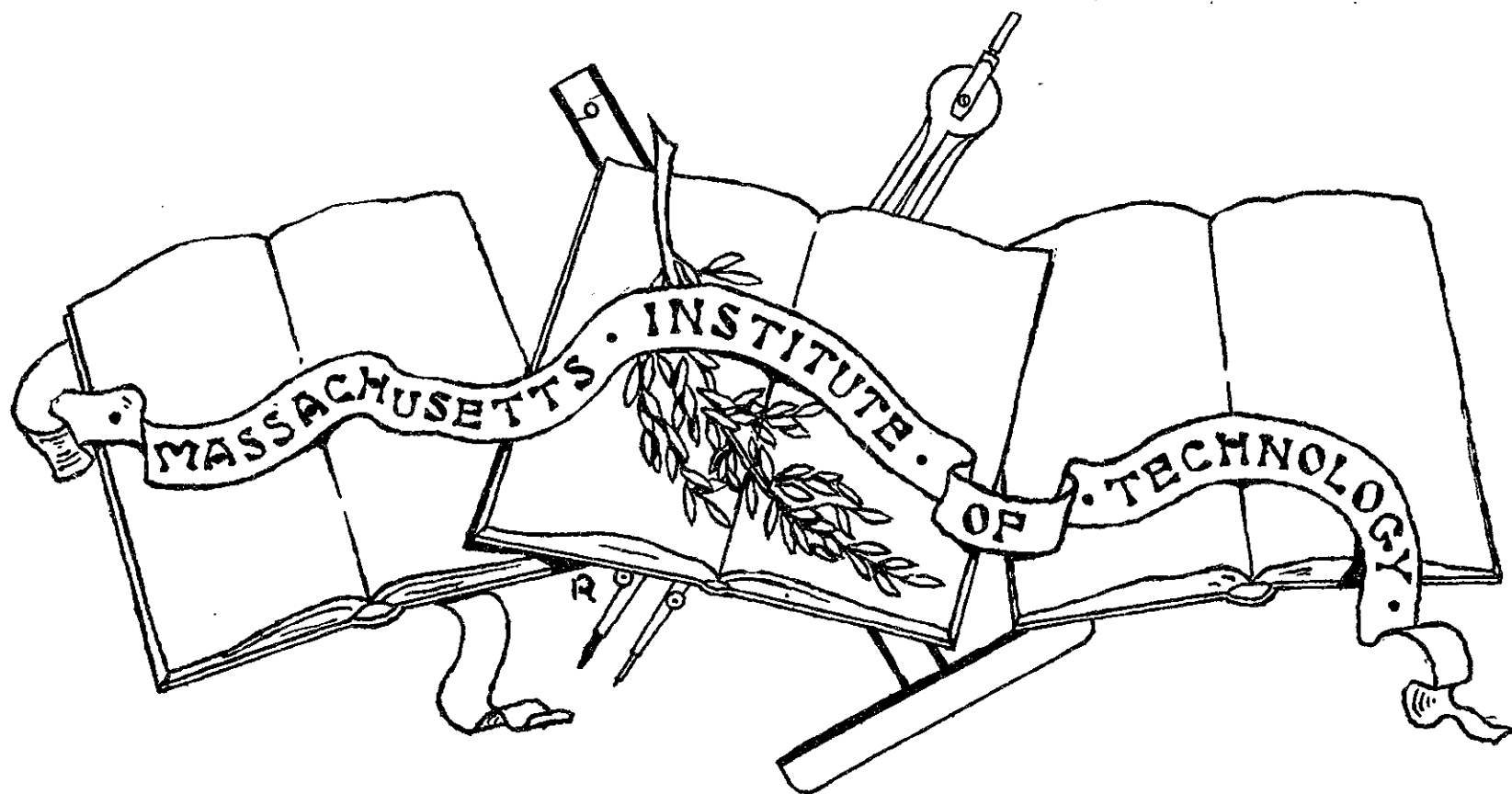
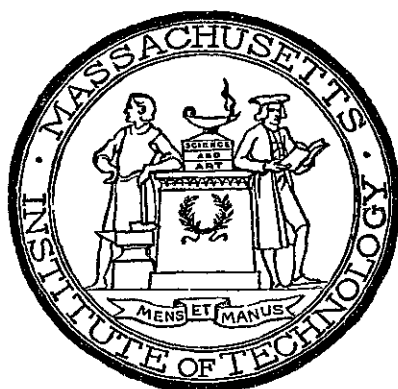


THE TECH



BOSTON, MASS.

VOLUME XVI.

NUMBER 18.

MARCH 4, 1897.



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CLARENCE RENSHAW, '99, *Assistant Editor in Chief*.
THOMAS EDDY TALLMADGE, '98, *Secretary*.
HARRY DRAPER HUNT, '97.
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Frank Wood, Printer, 352 Washington Street, Boston.

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not fail to be of interest throughout the manufacturing world. Both are old companies, which for many years, have been the leading loom manufacturers in the United States, if not the world, in quality of workmanship and quantity of their output. Both moreover, have an extensive foreign trade, filling large orders annually in England and on the Continent. The capital stock of the new corporation is fixed at \$3,000,000, the officers being chosen from the old companies, with Mr. Charles H. Hutchins, president.

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For the benefit of those interested we will say that candidates are elected by merit alone. They are asked to hand in news or other matter every week, and when they have shown their ability to do work of a reasonable quality and quantity, are elected to the Board. The Editor in Chief will be glad to meet all men, from any of the classes, who wish to try for the Board, at twelve o'clock on Saturdays throughout the term, and will gladly give any further information desired, as well as suggestions or criticisms in regard to their work.

It has been suggested to the Editors of THE TECH that abstracts of some of the thesis investigations, conducted by the Seniors this spring, would be of interest to the '97 men themselves, as giving the men a chance to see what their classmates in other courses are engaged upon, and to underclassmen as an indication of the sort of work that is before them. It is planned, therefore, to publish a short account of a typical thesis in each of the thirteen courses of instruction, and the Editors hope that the scheme will meet with favor.

Typical Theses.

COURSE II.

[Thesis of Messrs. Feeley and Clark.]

ONE of the things which mechanical engineers are frequently called upon to do is to determine the efficiency of boilers, engines, or complete steam plants. Messrs. Feeley and Clark, '97, decided to take a work of this character for their thesis, and obtained permission to conduct a test upon the plant of one of the mills of the Berkshire Cotton Manfg. Co., at Adams, Mass. The plant consists of a 1,600 H. P. Allis-Corliss twin tandem compound condensing engine, operated from a battery of seven Manning boilers. The main results sought for in such a test are the amount of steam used per horse-power

hour by the engine, and the amount of water evaporated per pound of coal by the boilers. Knowing about the results which such apparatus ought to give, by comparing the results of the test with these, it can be seen whether the proper economy is obtained; if it is not, the trouble can be located.

To determine the work done by the engine, "indicator cards" were taken on each of the four cylinders at frequent intervals. Indicator cards are curves obtained as follows: A small cylinder having a movable piston, working against a spring, is connected with the cylinder of the engine. To the end of the piston a pencil is attached, which is allowed to press upon a paper-covered drum. The latter is arranged so as to make one revolution during one stroke of the piston, and hence a curve is obtained whose ordinates show the steam pressure in the cylinder at each point of the stroke. From these the average steam pressure in the cylinders for one stroke was obtained, and, knowing the area and speed of the piston, the power developed by the engine was found.

In the boiler room the steam pressure was noted at intervals, and all the water and coal used during the test were weighed, and from these the second result was calculated. Samples of the flue gases were analyzed and from their composition the completeness of the combustion in the furnaces was found. Observations were also made by means of a calorimeter to determine whether the steam was wet, dry, or super-heated. Aside from the main results, Messrs. Feeley and Clark tested the efficiency of the economizer used for heating the feed water, and also the effect of steam jackets on the economy of the engine.

As a result of the test it was found that the valves on the engine were not set properly, and that the economizer was not producing the proper effect. Both of these faults were remedied by the owners on receiving a report of the test, and an appreciable saving has doubtless been effected.

Northwestern Alumni Banquet.

THE tenth annual banquet of the Northwestern Association, M. I. T., was held on Saturday, February 20th, at the Technical Club, Chicago, and proved to be the most largely attended and successful occasion in the history of the Association. Over sixty members were present, six States outside of Illinois being represented.

The entire clubhouse of the new Technical Club was at the disposal of the members of the Association. Before the banquet a business meeting was held in the main reception room, at which the following officers were elected for the ensuing year: President, B. R. T. Collins, '88; Vice President, R. H. Pierce, '85; Secretary and Treasurer, E. M. Hagar, '93; Executive Committee, H. H. Cutler, '81, Solomon Sturges, '87, John L. Shortall, '87, and Louis A. Ferguson, '88.

The arrival of President Frank Wells, '70, who left a sick bed to be present at the banquet, was greeted with an ovation which attested to the popularity of the retiring President, who has held that office for three terms, being the first President of the Association, and also serving the last two years. Mr. Wells opened the after-dinner speaking with a short address in his usual pithy style, and then introduced as the principal speaker and guest of the evening Prof. Robert H. Richards, of the Institute, who, fortunately for the Association, had been in attendance during the week past at the Annual Meeting of the American Institute of Mining Engineers, held in Chicago, and had accepted an invitation to be present and speak at the banquet, postponing his return to Boston for that purpose.

Professor Richards spoke touchingly of the great loss the Institute had sustained in the death of Gen. Francis A. Walker, paying a tribute to his high attainments and noble character; and assured his hearers that there was no cause to fear for the future of the Institute, as its organization had been so perfect under President Walker's administration that it would

not suffer by a brief interregnum until a new executive head could be chosen. After Professor Richards's speech a silent toast was drunk, standing, to the memory of President Walker. At this point President Wells, being obliged to retire, introduced President-elect B. R. T. Collins, '88, as master of ceremonies for the remainder of the evening, who, in turn, introduced Mr. L. A. Ferguson, '88, who spoke on "Electricity direct from Coal;" Mr. R. H. Pierce, '85, on "Diffusion of Light;" Mr. S. D. Flood, '90, on "The New South and its Future;" and Mr. J. A. Carney, '90, on "The Etching Process as applied to the Inspection of Iron and Steel." After this Mr. R. E. Richardson, '85, rendered a zither solo, following which Mr. Solomon Sturges, '87, responded to the toast "My Career at Tech.;" Mr. M. E. Cooley, '87, to "The Class of '87;" Mr. R. A. Shailer, '73, to "The Successful Engineer;" Dr. R. W. Hardon, '82, on "Medical Engineering;" and Mr. Severance Burrage, '92, to "The Hoosier Schoolmaster."

'97 Class-Day Election System.

(Continued from issue of THE TECH for Feb. 25, 1897.)

ARTICLE XI.

Forms of Ballot.

SECTION 2. For Election Day, the ballot will be arranged from the positions. Under the name of each position and the number to be voted for will be placed the names of the formal nominees for that position in alphabetical order, with a square at the side of each name.

Directions for Voting.

Place a cross in square opposite name desired.

For each office, vote for no more than number stated.

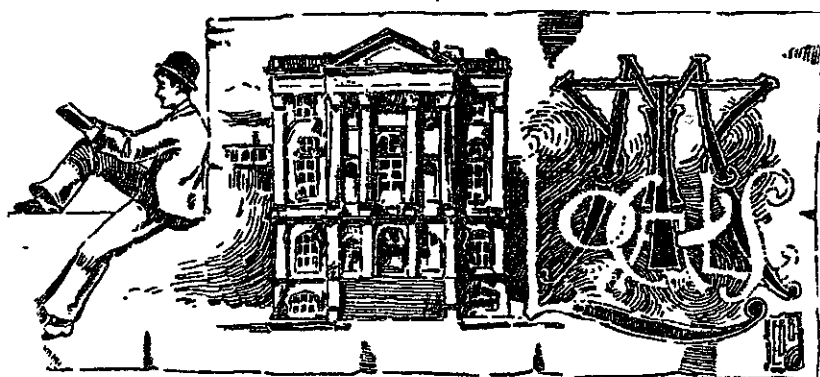
Unless these conditions be complied with the ballot shall be considered void, in so far as the irregularities affect it.

Articles VIII. and IX. shall be printed in full on the ballot.

A vote of yes or no will be taken on the following amendments to the Class constitution:—

"Shall the consent of one-third of the class be necessary to amend the constitution?"

"Shall the section of the constitution, limiting the amount of the Class-Day Assessment to two dollars, be repealed?"



The date for the Freshman Dinner has been fixed for the twenty-seventh of March.

The problem given out for the Senior specials in architecture is that of a small church.

Sophomores Course II. Mechanism have finished "Notes on Mechanism," and will begin "Notes on Machine Tools."

The Senior Class Dinner will be held at Young's Hotel on March 6th. H. N. Allen has been chosen Toastmaster. Tickets may be procured from any member of the committee.

The Junior Prom. Committee appointed by the Executive Committee of the Class of '98 on Wednesday of last week consisted of the following men: Paul Clifford, Howell Fisher, A. W. Grosvenor, Durand Mayer, and E. B. Richardson.

The shoot of the Gun Club, held on February 22d, was well attended in spite of the bad weather. A visitor, Mr. M. D. Miller, secured the highest score of the day. The sweepstakes at doubles was the most interesting event, and was won by Mr. S. B. Miller, 1900.

On Tuesday and Wednesday, February 23 and 24, the Industrial Chemistry Class, under the direction of Instructor Thorp, went in two divisions to Somerville, where the Union Glass Works were visited. Much interest was shown in the method of heating the furnace by means of an oil jet in a blast of hot air.

The Freshmen Orchestra now contains eighteen members, and is increasing daily. At the close of the rehearsal a business meeting was held, and the following men elected to hold

office for the ensuing year: J. W. Hussey, Musical Director, F. E. Dodge, Treasurer, Maurice Davenport, Business Manager. The manager has had a talk with the manager of the Walker Club Play, and it is hoped that an engagement will follow. Although the orchestra already contains much excellent material it is hoped that every Freshman who plays an orchestral instrument will try for it, and avail himself of the opportunities offered for enjoyment and instruction.

Professor Homer has announced his plans for the summer school in architecture for 1897. If practicable two trips will be undertaken, one through Europe under the direction of Professor Homer, and one in Virginia under the direction of Mr. H. W. Gardner. The European school is open to third, fourth, and fifth year men of Course IV., and fourth year men of Course I. This school will be a ninety days bicycle trip in northern Italy and Belgium, where studies of the Romanesque Renaissance and Gothic architecture will be made. The Virginia trip is undertaken for the purpose of studying Colonial Architecture and will be of twenty days duration.

The reports of work accomplished, read at the annual meeting of the Y. M. C. A., show that great forward steps have been taken. New departments of work have been added and old ones strengthened. The membership now numbers 179, distributed as follows: Senior Class, 21; Junior Class, 26; Sophomore Class, 41; Freshman Class, 68; others, 23. Weekly devotional meetings have been held, two Bible and one mission study class conducted. This term the Association has planned three Bible classes and one mission study class. All students are invited to join these classes. For particulars in regard to them, consult W. B. Nelson, '98, and C. M. Lewis, '99.

Of the 286 members of the Freshman class, 276 have selected courses, distributed as follows: Civil Engineering, 52; Mechanical

Engineering, 73; Mining Engineering, 26; Architecture, 24; Chemistry, 18; Electrical Engineering, 39; Biology, 6; Physics, 2; General studies, 7; Chemical Engineering, 11; Sanitary Engineering, 2; Geology, 2; Naval Architecture, 14. From the figures it will be seen that Course II., as usual, stands far in the lead, while a noticeable and very desirable advance has been made in Course III. On the other hand it is to be regretted that a greater number have not chosen Course XI., as it is an attractive and thorough course and excellent business chances are open upon its completion.

The Tennis Association held an important meeting on the twenty-fourth, at which it was voted to reduce the annual dues for members of the Senior Class to one dollar. The Executive Committee of the Association was made a permanent tournament committee, and President Lansingh announced that three tournaments would be held this spring. The first will be a round robin between the members of the Tennis Team, the second, a closed tournament for club members, and the third, an open tournament for the championship of Technology. The Tennis Team is composed of the following men: M. F. Ewen, '97, R. M. Ferris, '97, A. W. Jackson, '97, V. R. Lansingh, '98, H. O. Ayer, '99, and G. R. Street, '99. After the season opens, any member of the team, if challenged, must defend his position by playing within two weeks.

Mr. Boos's Summer Outing.

ALL Technology students who have talked a number of times with Gymnasium Instructor Boos have been struck with his great inborn love for travel. This impression is not formed all at once, but comes after one has listened to him again and again, as he relates incidents of his travel; and more vividly does this characteristic appear when one is given an insight into his fund of keen observations relative to

the customs and character of the peoples he has mingled with. He has planned a trip for the coming summer which should interest all Technology men. In his prospectus he says: "During my many journeys in Europe, on the wheel especially, of late years, where the highways are mostly as if made for cycling, I became acquainted with a number of American cyclists, who in spite of having good wheels and good roads at their disposal, were yet not at all satisfied. They were not enough at home in the languages, and went through stretches of country of no interest. In a word, they were in want of a teacher and guide at the same time. I would, therefore, like to be guide, friend and teacher to those who decide, in the summer of 1897, to make a tour on the wheel through Middle Europe. My invitation is especially intended for students of our colleges and universities, and members of athletic associations, who intend to become acquainted with the most magnificent parts of Germany, Tyrol, Switzerland, and parts of France and Italy next summer. I have arranged the route of the journey with great care, after my own experience. A pleasant combination of cycling and excursions on foot, especially in the Alps intended to be gone through, is also arranged."

A native born German, schooled in the curriculum of the *Gymnasium* and *University*, with twelve years' experience in European travel, Mr. Boos is eminently fitted to conduct a bicycle party over the line of march laid out. The demand for just such a guide has been felt for a number of years, and has heretofore been unsatisfied. The need of such a conductor comes especially after one has completed an unsystematic and ill-planned trip, and realizes that profitable sight-seeing is an art. It is then he feels that only an experienced guide would have made the trip a thorough success. Any who contemplate going to Europe for the coming summer will do well to communicate with Mr. Boos before the limited party is completed.



In connection with the account of the dinner of the Northwestern Alumni Association, we give the following extracts from a letter received by THE TECH from Mr. Solomon Sturges, '87:—

“First of all among the alumni here who deserve mention for steadfastness, liberality, and zeal in behalf of Technology, is Mr. Frank Wells, '70. He has been untiring in his efforts to keep up interest in Tech. affairs among the alumni in Chicago, has conducted all the monthly meetings, and has spent much of his time in working up means of enjoyment for the members of the Northwestern Association. B. R. T. Collins, '88, and E. M. Hagar, '93, have been able lieutenants. To mention every man who is a member of the Northwestern Association and describe what he is doing, is to tell you of the business of over a hundred, all of whom are prospering in their different lines, and all of whom seem to be making money for themselves or their employers. They are a careful, industrious lot of men, and have made friends out here easily, and retained them as easily. They are a domestic lot, and marriages are taking them out of the bachelors' ranks, and young Tech. students are springing up all about us; but here we all feel it a wise move for graduates to come to this locality and grow up with the country. Eighty-seven has her decennial in June, and I hope for a substantial Chicago delegation to go to Boston; you can view it then and see how it strikes you. All the other classes here from '68 to '97 are just as good as '87 now, though ten years ago '87 was the only one. I will do my best in future to keep in closer touch not only with Chicago alumni, but with

other alumni, and also with our home—old Boston; and perhaps I may be able to write something interesting later. I remember when I used to be on the editorial staff of THE TECH myself. I remember also I smoked my first cigar at one of the editors' dinners. I wish I could remember some of Professor Cross's physical experiments, or what *dx* equals, or how you get it, or what it is, as well as I remember the effect of that twenty-five cent Havana. Wishing THE TECH and Technology all success, I am

Very sincerely,

SOLOMON STURGES, '87.”

COMMUNICATIONS.

The Editors do not hold themselves responsible for opinions expressed by correspondents.

TO THE EDITORS OF THE TECH:

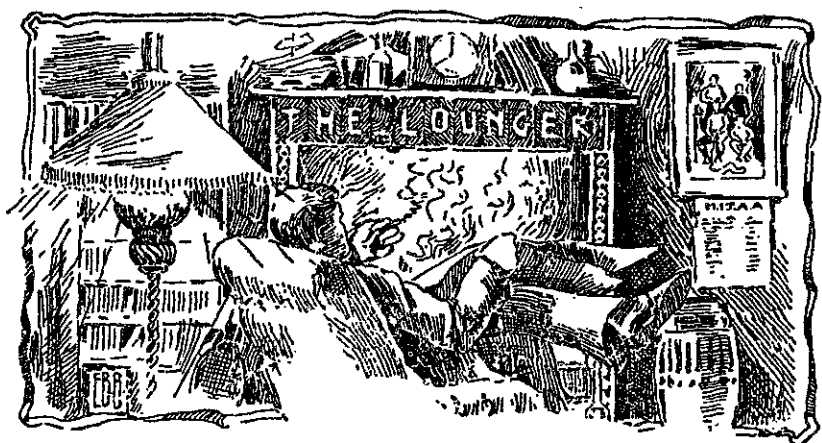
I should like to give a warning to men who try for any of the teams that require training.

I know a man who has worked hard at the “Gym.” this year. During the last month he was training for the relay team. Although he looked in good condition, Mr. Boos thought otherwise. He examined him and found his heart had been overworked. A specialist confirmed this opinion, and prohibited any further hard athletic work.

Now I suggest that the faculty pass a rule requiring every man who exercises at the “Gym.” and especially those men who are training for some team, to be examined by Mr. Boos. Also that Mr. Boos be empowered to limit anyone in his exercises who is not fit to do such work.

It is rather surprising that an institute like this has not had some such rule before. Especially since the work requires the energy of a man in good condition. At Harvard, when a student wishes to train, he must first be examined by the physical director to see if he is able to stand hard work. If not, the student cannot enter any athletic contest. This system is not limited alone to Harvard, but is in use at nearly all large colleges.

X.



SOME days since, as the Lounger was dreaming in his sanctum, his reverie was disturbed by a succession of most painful sounds. He roused himself with a start, and began to speculate as to whether the inhabitants of the Zoo or several hundred barrel organs were more likely to have invaded the quiet precincts of Rogers. There was no Senior class meeting at the time which might account for such a babel; neither could the pandemonium be caused by the usual greeting of Ninety-eight to her favorite son (and hair). At last the Lounger decided to investigate for himself the cause of the disturbance; and upon opening the door of THE TECH office his curiosity was gratified. The Banjo Club in Room 31, and that newest enemy to peace, the Freshman Orchestra quartered in Room 33, were engaged in a dual contest. In volume of dissonance the Orchestra easily bore off the palm, since it possessed a drum under the control, apparently, of a promising athlete. In endurance, however, the older aggregation was vastly superior, and it also gave more indications of team work. As the Orchestra began a serenade in D minor, and the banjos twanged merrily away at a plantation melody in G sharp, the Lounger sadly but firmly left the Technology Buildings, and walked down Tremont Street to seek comparative peace and melody in the rattling of the electric cars and the twanging of their bells.

Truly is there no rest for the Institute politician. Now that all the energies of '97 are bent upon the comprehension of the Class-day election scheme, the Juniors and the Sophomores are plunged into the mad vortex. The statesmen of '99, of course, had their "Technique" Board arranged long ago, but still the election of the Electoral Committee has made the schemers yet more active. It is to be hoped that every man upon the Committee will go into this matter firmly convinced that everybody else is banded together in an iniquitous clique, and resolved to suspect and

distrust everyone in consequence. This has been the method found in the past most fruitful of confidence and good-will. As for '98, there would appear to be no reason for political difficulty. Yet, nevertheless, the Lounger hears sundry whispers which lead him to infer that the selection of a Prom. Committee has caused heart-burnings in some quarters. This the Lounger regrets, for he always looks forward to the joys of Junior Week with chastened eagerness. He hopes, therefore, that the Committee will uphold the standards of the past and the credit of the present Junior Class.

The Lounger was surprised to note a widespread desertion of the Institute last Saturday, and on inquiry was still more astonished to find that the missing ones were all bound for the weekly run of the Hare and Hounds. The fact that the course passed through the Wellesley College grounds served, perhaps, to explain the peculiar phenomenon. Indeed, every man who had ever run, or had ever thought he could run, and who was proud of the calves of his legs, as most men are, grasped the opportunity with avidity. Only a few of those cursed with over-slender shanks staid at home. The effect of this galaxy of masculine beauty upon the minds of the Wellesley maidens must have been moving in the extreme, and the only possible retaliation is for the college bicycle club, if there be such an one, to visit the Institute in bloomers.

There are certain of the chemists who, having wearied of dissolving insoluble residues, and filtering unfilterable precipitates, seek something softer and analyze butter and milk. One of them wished for some of the lacteal fluid on a certain day, and sought out for its purchase a neighboring emporium where they sell milk—and other things. He had recently paid his subscription to THE TECH (this seems improbable, but is true, nevertheless), and was poor. He informed the clerk, therefore, that the milk was for Technology, and turned to go. But the clerk in question was new and conscientious. "Technology?" he said. "Wait a minute. Is that a branch of the Y. M. C. A.?" This tale is certified by several credible witnesses.

"Why look you so intently?"

She asked in accents terse.

"I love to scan your perfect form."

Quoth she, "I'm not averse!"

—EX.



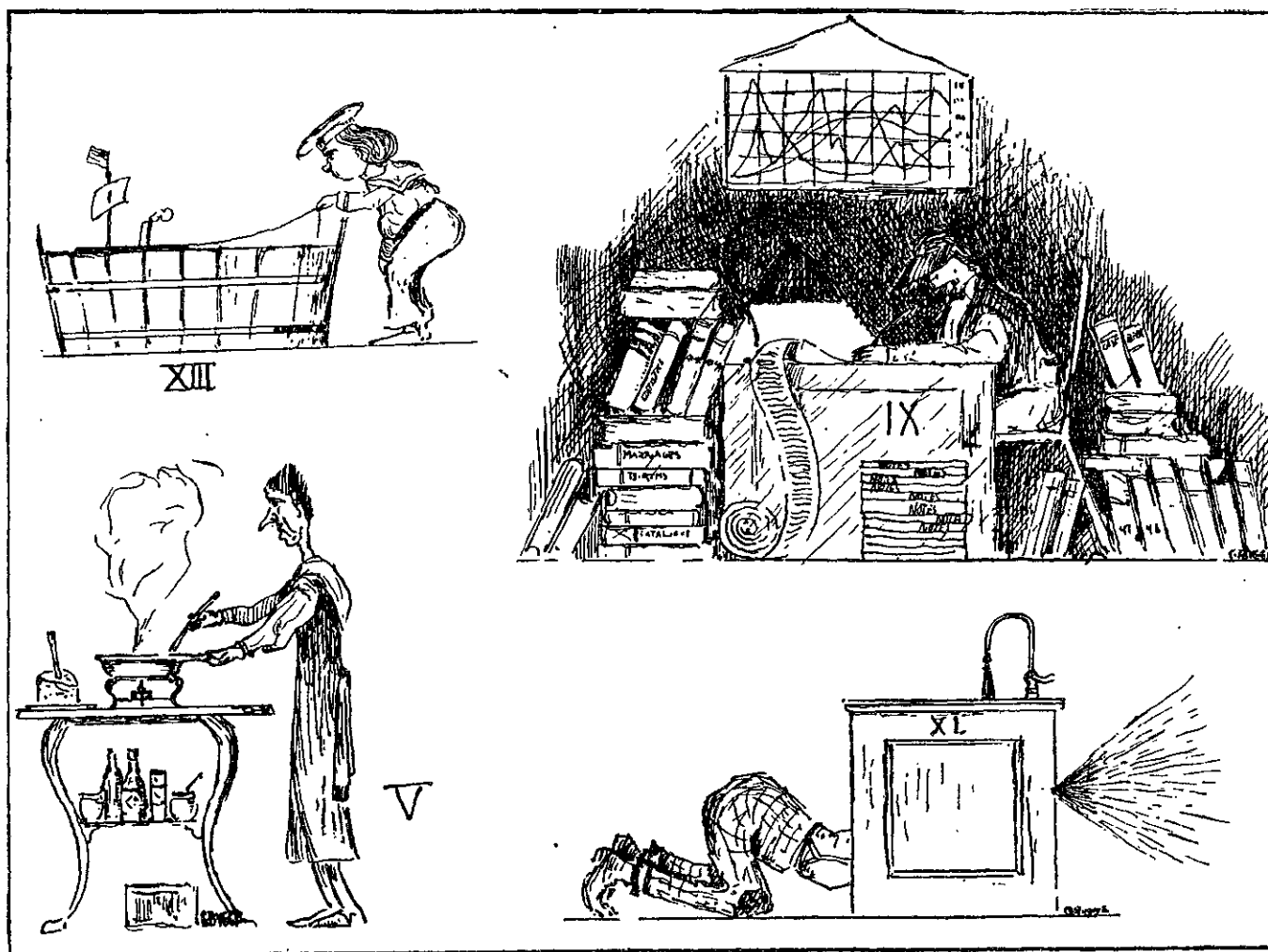
Kilpatrick, the Princeton runner, is to become a professional.

Ben Hurd says that he does not intend to compete at Worcester this year.

April 24, Pennsylvania will hold a series of relay races similar to those held last year. Over a hundred colleges and preparatory schools will be invited to send teams. The grouping of teams will be different from last year.

At the last meeting of the New England Intercollegiate Athletic Association, held in Boston, February 13th, the following officers were elected for the ensuing year: President, J. N. Pringle, Dartmouth; Vice President, I. G. Hicks, Brown; Secretary, I. R. Kent, Tufts; Treasurer, H. W. Jones, M. I. T. Executive Committee, C. A. Booth, Worcester P. I., J. H. Lecour, Trinity, T. L. Pierce, Bowdoin.

At the last meeting of the New England Intercollegiate Association it was voted to abolish the mile-walk and consequently that event will not be contested at the Worcester meeting next spring. This will particularly affect Brown, as she won two places in this event last year; nevertheless the step seems a wise one, and one in which the New England Association will doubtless be followed in the near future by other Associations.



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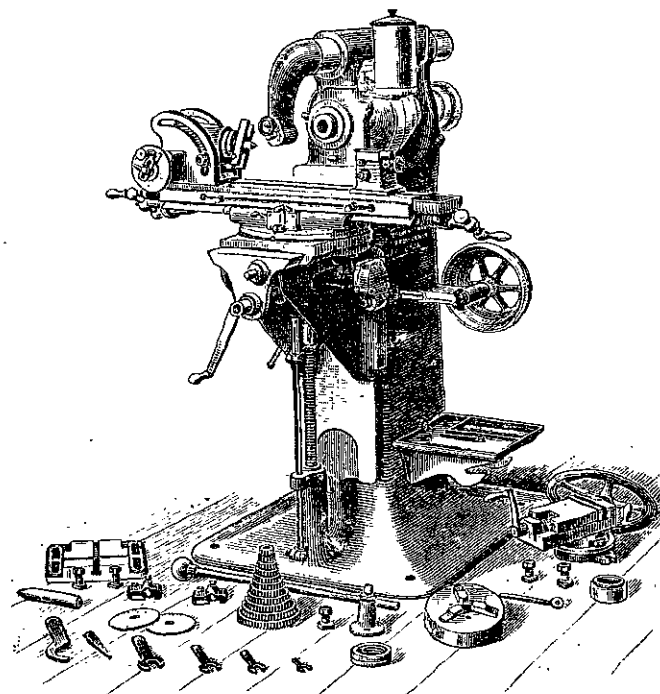
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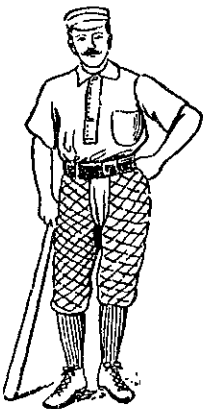
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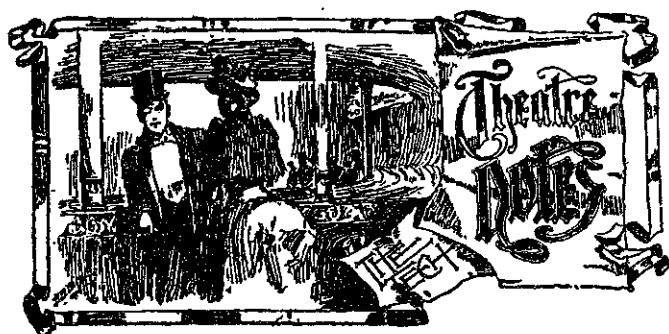
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The Tremont Theatre.—Mr. John Hare and his Garrick Theatre company will this week repeat "Caste" and "The Hobby Horse," and in addition will present Sidney Grundy's "A Pair of Spectacles," and also a new one-act play by Francis Moore, "When George the Fourth was King." It is a rare treat to have a revival of the classic play of "Caste," and crowded houses at the Tremont are the nightly evidence of Boston's appreciation.

Castle Square Theatre.—The management of Castle Square are public benefactors, Boston receiving a liberal education in operatic music at an astonishingly low price. The crowded houses testify to Boston's appreciation of the company and its labors. "Il Trovatore" will without doubt be greeted with enthusiasm.

Boston Theatre.—The fourth week of "Under the Polar Star" at the Boston Theatre begins Monday. The company is an exceptionally strong one, and it is not surprising that the interest manifested should be so great.

Park Theatre.—"In Gay New York," the conspicuous hit of the day, is meeting with well-deserved success at the Park Theatre.

Boston Museum.—William Gillette's "Secret Service" will begin at the Boston Museum on Monday. Mr. Gillette's success in "Too Much Johnson" is still fresh in the minds of theatre-goers, and "Secret Service," while differing materially from the earlier play, has proven equally successful, and taxed the capacity of Garrick's Theatre, New York, to the utmost during its long run.

Hollis Street Theatre.—A nobler, a more romantic, or heroic figure has never been seen than Sothern's personation of de Launay in "An Enemy to the King," and he plays with a dash and vigor this last exquisite story from the pen of R. N. Stephens. Mr. Sothern's visit to Boston is always a social event, and his popularity equally divided among men and women.

The Zoo.—Mrs. Tom Thumb and her husband are to be here only one week more, and no one should fail to see the midget entertainers, including little Chiquita.

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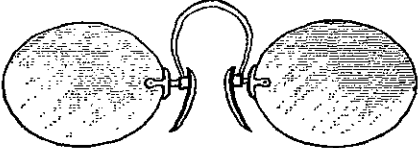
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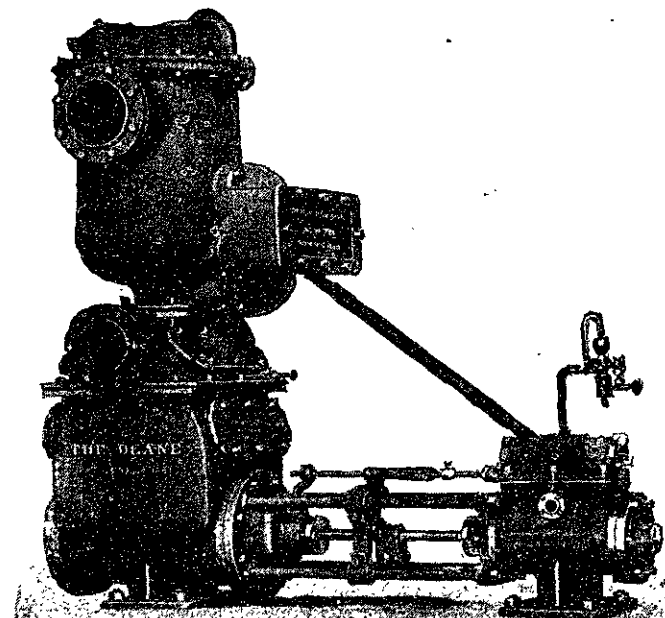
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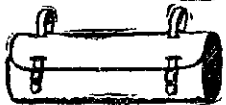
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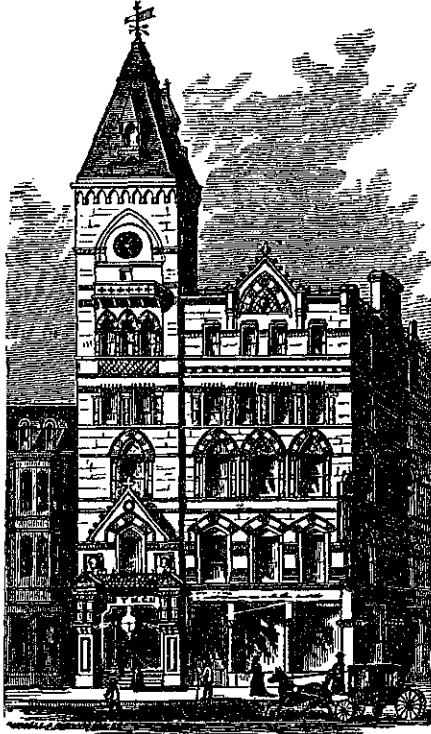
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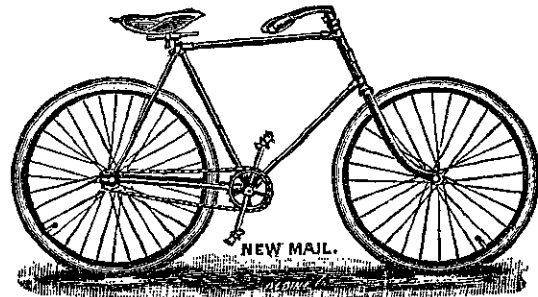
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